Recovery of polyolefin wastes, especially polyethylene and polypropylene for recycling, involves preparing waste for agglomeration and the addition of plasticizer or elastomer
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Patent Family

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Abstract:
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NOVELTY The raw waste is shredded and/or crushed. It is then agglomerated. It is mixed before, during or after agglomeration with a plasticizer and/or an elastomeric charge. The resulting mixture can be transformed for injection molding.

DETAILED DESCRIPTION Preferred Features: The wastes are mixed with a plasticizer and/or a charge of elastomer forming 5%-10% of the weight of the mixture. Following shredding and/or crushing, agglomeration and mixing takes place, then the plasticizer and/or elastomer are mixed in. The mixture is then introduced into the injection molding press. The mixing process is one of compounding to form a liquefied mixture. This is cooled then granulated in readiness for injection molding. Compounding takes place in a single- or dual-screw extruder with different feed hoppers for the prepared waste and for the plasticizer or elastomeric charge. The liquefied mixture passes through a die producing continuous filaments or -strands, followed by cooling and granulating for injection molding.

USE To recover olefins, especially polyethylene and/or polypropylene, to make granules for injection molding.

ADVANTAGE Large quantities of suitable waste arise in manufacture of disposable nappies, as a two-component sheet containing both polyethylene and polypropylene. New industrial products, e.g. palettes, can be made. These have suitable mechanical and thermal properties, thanks to addition of

elastomer or plasticizer. The wastes can be re-used at their points of origin, yielding high value.

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